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ABSTRACT

Information technology has developed to the point of providing a means to manage nursing and related health-care data effectively for nursing administrators, educators, practitioners, and researchers. Therefore, the newly recognized area of nursing informatics is important to the nursing profession as a whole. Nursing informatics is defined as the integration of computer and information science into nursing-practice settings to enhance client care and the profession. Nursing schools and health settings, in which nurses must prepare for or function in their nursing roles, must fully utilize the nursing informatics capabilities currently available. Technologically enhancing nursing will ultimately improve client care. (Contains 4 references.) (Author/SLD)

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What is Nursing Informatics?

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Abstract: Information technology has developed to the point of providing a means to effectively manage nursing and related health care data for nursing administrators, educators, practitioners, and researchers. Therefore, the newly recognized area of nursing informatics is important to the nursing profession as a whole. Nursing schools and health settings, in which nurses must prepare for or function in their nursing roles, must fully utilize the nursing informatics capabilities currently available. Technologically enhancing nursing will ultimately improve client care.

Background

The amount of information available in health care continues to grow by leaps and bounds. This vast quantity of information makes it difficult to manage. To further complicate the issue, the dissemination of this information is not timely and this is related to the time gap between submission and publication of journal articles. According to Werley and Grier (1981), "the information with which nursing is concerned is broader than that in other health care fields. If nursing is to continue to provide patient care, can it afford not to emphasize the computerization of information?" (p. 319). Nursing is a broad, practice-based profession and needs a variety of information to be readily available. Therefore, nursing informatics evolved--nursing's integration of information and computer science--to enhance client care and the nursing profession.

However, the mountain of health care information available and the need for timely information to enhance client care is not unique to nursing. The medical field has recognized the need to harness the information explosion and facilitate the dissemination of relevant information. The National Library of Medicine (1986), in its Report of Panel 4, has asserted that "by 1996, one fifth of American medical schools will offer training in medical informatics and all American health science schools will offer training in medical informatics as part of their curricula" (p. 67). As a means to this desired goal, nursing must work collaboratively, so that nursing informatics can augment the health data field in such a way that nurses' skills and knowledge enable them to efficiently and effectively manage the ever increasing amount of health care data available today.

Introduction

Currently, nurses are not adequately prepared to integrate computer and information science technology (Romano, 1988). The result of this technological retardation affects every aspect of nursing. Therefore, nurses must be able to understand the potential uses of computers in both information management and research to fully benefit them in their work settings. Nursing must be able to move forward and embrace the potentials that computers and information systems offer.

Nursing Informatics

Nursing informatics means so much more than simply utilizing computers. It is the integration of computer and information science into the nursing practice settings to ultimately enhance client care and the nursing profession as a whole. Nurses must be able to manage, manipulate, and disseminate data, information, and knowledge. Data refer to raw facts that have no meaning in and of themselves, but information is processed data that is given meaning. It is important to note that each user has a knowledge base from which they draw in order to assimilate information. Knowledge is considered to be a body of related information. However, not all information is informative to everyone. The related scraps of information are integrated and synthesized to form a knowledge base for the individual. Therefore, nursing informatics, as adapted from McGonigle and Eggers' (1991) definition, is the synthesis of nursing science, information management science, and computer science to enhance the input, retrieval, manipulation, and/or distribution of nursing data, information, and knowledge for the four areas of nursing to enhance client care while advancing the profession of nursing.

Nurses must integrate nursing informatics into their professional lives. When nurses in all four areas of the nursing profession have a firm nursing informatics knowledge base, they will no longer have to rely solely on commercially available nursing systems but may be able to escalate to the level of designing and developing their own nursing systems to meet specific needs.

Nursing Administration

The nursing administrator is responsible for coordinating, supervising, and facilitating subordinates to work toward the goals and objectives of the institution in which they practice. They also integrate research findings, conduct research studies, and assist with research efforts under their governance. They are also educators at times, as well.

Administrators are able to access more than 150 functions, depending on the system used in their practice facility and these functions range from budget preparation to personnel surveys and beyond. Additionally, they have access to quality assurance worksheets and collation.

Nurses in these positions have a variety of uses for their electronic communications that range from administrator to administrator, administrator to nursing employee, administrator to patient, administrator to physician, and administrator to other health care employees. Furthermore, they are able to network within their facility, across the state, country or the world, and they can access electronic bulletin boards and/or even create their own. Administrators can electronically manage their personnel files, budgets, payroll, census, staff planning, staff allocation, and summary reports. With the move toward the concept of case management, they can develop the critical pathways and electronically manage this data and information. As if this integration is not enough, word processing, spread sheets, and database management programs can further facilitate their roles.

Nursing administrators must support the integration of nursing informatics into their settings to enhance the nursing profession. They could also benefit from the integration of nursing informatics into their specialty area of nursing. Nursing administrators are able to electronically manage their data, including personnel and client data, and the electronic networking capabilities that link them with other administrators and promote collaboration. Since administrators are responsible for all four areas of nursing, they must assume responsibility for the integration of nursing informatics into each area. It will be their commitment to the increased integration and exploration of technological advances that will enhance nurses' job performance and the advancement of the nursing profession.

Nursing Education

Nurse educators impart knowledge and skills. These nurses also incorporate research findings and conduct and assist with research studies. There has also been an increase in the number of nursing educators that are currently practicing as well.

Within recent years, the health care field has experienced a growth in the number of facilities utilizing personal computers to meet their inservice, staff education, and patient teaching needs. These facilities have also integrated client discharge educational plans. As a result, the nurse educator can use computer assisted video instruction (CAVI), computer assisted instruction (CAI), compact disc interactive (CDI), computer mediated instruction (CMI), expert systems, and knowledge synthesizers. Thus, the nurse educator preparing nursing students must be informatics competent to fully prepare their students for the real world of the registered nurse through the use of multimedia and computerized testing. Additionally, the nurse educator needs to both demonstrate and utilize a variety of information systems that the students might encounter during their clinical rotations and on the job after graduation. More importantly, nurse educators must require nursing students to be informatics competent and capable of maneuvering within an electronic environment in order to conduct electronic literature searches and navigate within electronic bulletin boards and electronic mail systems.

Nursing education must assess the nursing informatics' needs of the nursing profession and make necessary curricular changes to better prepare their students because the entry level professional can no longer be technologically retarded. This beginning practitioner needs to be informatics competent. Nursing schools are not adequately preparing their students for computer use, and nurses, who are currently working and want to learn about nursing informatics, are not afforded continuing education course work in this area. Therefore, nursing educators must begin to incorporate and utilize nursing informatics throughout their nursing curriculums.

Nursing Practice

Nursing practice refers to nurses who provide direct care to the client, coordinate and supervise subordinates who are also providing direct client care, and oversee the education of peers, subordinates, and clients. This nursing area focuses on health promotion, maintenance, early detection, and intervention. Furthermore, practicing nurses integrate current research findings and assist with clinical research efforts.

The nurses who are practicing at the client's side are using computers and information science to manage their client's electronic data. They also need timely accurate information to enhance their nursing skills and client care. The use of electronic bulletin boards, databases, and networking with other professionals will greatly enhance their ability to access needed information. Utilizing nursing informatics, practicing nurses would be able to retrieve up to date information electronically rather than waiting for the journal article to be published because by publication date, the information may be outdated. Thus, practicing nurses can greatly improve their client care by having access to electronic information and networking. The networking capabilities have linked nurses across the country and beyond. This high-tech communication capability facilitates collaboration and clinical research, an area of priority since nursing is a practice-based profession.

In their direct care role, the use of automated nursing notes has already increased. These notes contain nursing orders that require medical orders, as well as independent nursing functions including the nursing process documented on the care plan. As the nursing profession moves toward case management, critical pathways will be electronically documented, monitored, and researched. There are many functions that have become electronic including the nursing process, transfer notes, and discharge plans and summaries.

Nursing Research

The nurse researcher is looking for solutions. This nurse can also be an educator or currently practicing. A nurse researcher uses information retrieval methods that are vastly improved. Electronic media are timely and provide the researcher with immediate data, information and knowledge. Enhanced data processing methods, database management systems, statistical analyses, graphic displays, and text editing capabilities facilitate the research effort even more. An example of this can be seen with word processing packages that place text into manuscript style with specific style formats available.

As on-line information sources continue to develop and become refined, data, information, and knowledge can be available within minutes of its submission. Nursing researchers will be able to quickly disseminate their findings using electronic formats and will also be able to electronically locate current and accurate information as more bulletin boards, newsletters, and journals move toward becoming available on INTERNET.

Electronic networking capabilities assist nursing researchers by linking them in communication with other researchers who share commonalties. This enhances collaboration and joint research ventures. Coupling the networking capabilities with the ability to access, retrieve, input, and manipulate data greatly promotes nursing research efforts. The immediate dissemination of research findings will enhance the nursing profession as a whole.

Summary

Each of the four areas of nursing can benefit from using nursing informatics and the functions are shared across the four areas. That is, nurses who are providing direct care use functions once thought to be only for research, administration, and/or education. In some instances, nurses are now evolving from users to developers of systems designed specifically to meet nursing needs. They are no longer looking to others to design systems to solve their problems. Instead, they are developing the systems.

Nursing informatics must come of age; it is important to meet the challenges currently facing the nursing profession while preparing for nursing's future. As the nursing profession embarks on incorporating the state-of-the-art electronic capabilities into nursing informatics, it must also project and embrace the future direction of the technological explosion. Nurses must be informatics competent to continue to grow professionally while fostering the growth of the nursing profession.

References

McGonigle, D. & Eggers, R. (1991). Establishing a nursing informatics program. *Computers in Nursing, 9*, 184-189.

National Library of Medicine. (1986). *Medical informatics*. (Report of Panel 4). Washington D.C.: U.S. Department of Health and Human Services.

Romano, C. (1988). Preparing nurses for the development and implementation of information systems. In H. Peterson & U. Gerdin-Jelger. (Eds.) *Preparing nurses for using information systems: Recommended informatics competencies*. NY: National League for Nursing.

Werley, H. & Grier, M. (Eds.). (1981). *Nursing information systems*. NY: Springer Publishing.